

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (Previously Presented)

A medical device and position sensor combination comprising:

- (a) a medical device having a body;
- (b) a position sensor attached to a portion of the body, the position sensor having a core made of a Wiegand effect material, and a winding circumferentially positioned around the core, the position sensor being used for determining position coordinates of the portion of the body of the medical device, the position sensor maintaining accuracy of ≤ 1 mm at temperatures greater than 75°C.

Claim 2. (Previously presented)

The combination according to Claim 1, wherein the winding is attached to the core.

Claim 3. (Cancelled)

Claim 4. (Previously Presented)

The combination according to Claim 1, wherein the position sensor is also used to determine orientation coordinates of the portion of the body of the medical device.

Claim 5. (Cancelled)

Claim 6. (Previously Presented)

The combination according to Claim 1, wherein the position sensor maintains accuracy of ≤ 1 mm at temperatures at approximately 80°C.

Claim 7. (Previously presented)

The combination according to Claim 1, wherein the core has an outer diameter less than approximately 0.3mm.

Claim 8. (Previously presented)

The combination according to Claim 7, wherein the core has an outer diameter of about 0.25 mm.

Claim 9. (Previously presented)

The combination according to Claim 8, wherein the winding is attached to the core.

Claim 10. (Previously presented)

The combination according to Claim 9, wherein a combination of the core and the winding has an outer diameter less than approximately 0.5 mm.

Claim 11. (Previously presented)

The combination according to Claim 10, wherein the combination of the core and the winding have an outer diameter of about 0.4 mm.

Claim 12. (Previously presented)

The combination according to Claim 11, wherein the material of the core comprises cobalt.

Claim 13. (Previously Presented) The combination according to Claim 12, wherein the material of the core further comprises vanadium.

Claim 14. (Previously Presented) The combination according to Claim 13, wherein the material of the core further comprises iron.

Claim 15. (Previously Presented) The combination according to Claim 14, wherein the material of the core comprises approximately 20%-80% cobalt.

Claim 16. (Previously presented) The combination according to Claim 14, wherein the material of the core comprises approximately 2%-20% vanadium.

Claim 17. (Previously presented) The combination according to Claim 14, wherein the material of the core comprises approximately 25%-50% iron.

Claim 18. (Previously presented) The combination according to Claim 14, wherein the material of the core comprises approximately 52% cobalt, 10% vanadium and 38% iron.

Claim 19. (Previously presented) The combination according to Claim 9, wherein the winding is made of copper.

Claim 20. (Previously presented)

The combination according to Claim 4, wherein the position sensor has an accuracy within approximately 0.5 mm.

Claim 21. (Previously Presented)

A medical device and position sensor combination comprising:

- (a) a medical device having a body;
- (b) a position sensor attached to a portion of the body, the position sensor having a core made of a high permeable material, the material being a magnetic material that produces a magnetic field that switches polarity and causes a substantially uniform voltage pulse upon an application of an external field, the position sensor being used for determining position coordinates of the portion of the body of the medical device, the position sensor maintaining accuracy at ≤ 1 mm at temperatures greater than 75°C.

Claim 22. (Previously Presented)

The combination according to Claim 21, wherein the position sensor further includes a winding positioned around the core.

Claim 23. (Previously Presented)

The combination according to Claim 21, wherein the winding is attached to the core.

Claim 24. (Cancelled)

Claim 25. (Previously Presented)

The combination according to Claim 21, wherein the position sensor is also used to determine orientation coordinates of the portion of the body of the medical device.

Claim 26. (Cancelled)

Claim 27. (Previously Presented)

The combination according to Claim 21, wherein the position sensor maintains accuracy at ≤ 1 mm at temperatures at approximately 80°C.

Claim 28. (Previously presented)

The combination according to Claim 21, wherein the core has an outer diameter less than approximately 0.3mm.

Claim 29. (Previously presented)

The combination according to Claim 28, wherein the core has an outer diameter of about 0.25 mm.

Claim 30. (Previously presented)

The combination according to Claim 29, wherein the winding is made of wire.

Claim 31. (Previously presented)

The combination according to Claim 30, wherein a combination of the core and the winding has an outer diameter less than approximately 0.5 mm.

Claim 32. (Previously presented) The combination according to Claim 31, wherein the combination of the core and the winding have an outer diameter of about 0.4 mm.

Claim 33. (Previously presented) The combination according to Claim 32, wherein the material of the core comprises cobalt.

Claim 34. (Previously presented) The combination according to Claim 33, wherein the material of the core further comprises vanadium.

Claim 35. (Previously presented) The combination according to Claim 34, wherein the material of the core further comprises iron.

Claim 36. (Previously presented) The combination according to Claim 35, wherein the material of the core comprises approximately 20%-80% cobalt.

Claim 37. (Previously presented) The combination according to Claim 35, wherein the material of the core comprises approximately 2%-20% vanadium.

Claim 38. (Previously presented) The combination according to Claim 35, wherein the material of the core comprises approximately 25%-50% iron.

Claim 39. (Previously presented) The combination according to Claim 35, wherein the material of the core comprises approximately 52% cobalt, 10% vanadium and 38% iron.

Claim 40. (Previously presented) The combination according to Claim 30, wherein the wire winding is made of copper.

Claim 41. (Previously presented) The combination according to Claim 25, wherein the position sensor has an accuracy within approximately 0.5 mm.

Claim 42. (Previously presented) The combination according to Claim 21 wherein the material of the core comprises a copper, nickel and iron alloy (CuNiFe).

Claim 43. (Previously presented) The combination according to Claim 21, wherein the material of the core comprises an iron, chrome and cobalt alloy.